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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,667

06/21/2006

William L. Johnson

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7223

71897

7590

06/25/2008

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EXAMINER

LIN, KUANG Y

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

06/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,667	Applicant(s) JOHNSON, WILLIAM L.	
	Examiner Kuang Y. Lin	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1793

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over either US 5,647,921 to Odagawa et al. and further in view of either US 4,791,979 to Liebermann or US 4,648,437 to Pryor et al.

Odagawa et al. substantially shows the invention as claimed except that they do not mention the stabilizing step for obtaining the viscosity of the bulk solidifying amorphous in the regime of about 0.1 to 10,000 poise. However, since the puddle of the bulk solidifying amorphous alloy on the chill surface must be in a stable condition (see col. 4, lines 17-21 of Liebermann) and also since the viscosity is one of the critical factors to determine the strip thickness (see col. 3, lines 42-60 or Pryor et al.), it would have been obvious to obtain an appropriate viscosity of the casting alloy through a routine experimentation such that the injected melt will form a stable puddle to obtain a strip having designated thickness. With respect to claims 4, 5, 11-15 and 20, it would have been obvious to obtain these process parameters through a routine experimentation for a specific alloy product to be cast. With respect to claims 17 and 18, those alloy compositions are deemed to be conventional (see, for example, US 4,148,669 to Tanner et al. and JP 2001-303,218). With respect to claims 21 and 22, it would have been obvious to cast the

molten metal at any appropriate temperature as long as it can form a stable puddle on the casting roller.

3. Applicant's arguments filed May 12, 2008 have been fully considered but they are not persuasive.

a. Applicant in the response stated that none of the prior art references shows the stabilization step. However, it is noted that the claim simply recites stabilizing the bulk solidifying amorphous alloy at a casting temperature. Since the word "stabilizing" is a relative term, it is considered that the bulk solidifying amorphous alloy of the prior art references is also being stabilized at the casting temperature.

b. Applicant further stated that Odagawa et al. focus entirely on the mechanics of the casting process such as roller speed, slit size, slit geometry, cooling rate, etc. for forming sheet having thickness below 100 micron. However, it is a common knowledge that the thickness of the thin strip is also determined by surface tension between the molten metal and the chill surface, the ejection temperature and viscosity of the melt (see col. 3, lines 56-60). Thus, it would have been obvious to obtain the optimal ejection temperature and viscosity of the particular melt through routine experimentation.

c. Applicant in page 7, 1st para. of the response stated that Odagawa et al. never describe preferred viscosity levels. However, both secondary references do show that it is known to maintain the melt viscosity around 0.01 to 1 poise for casting the thin strip. In response to applicant's arguments against the

references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

d. Applicant in page 9, 2nd para. of the response stated that the text of Liebermann in col. 4, lines 16-21 assumes that the reader will be casting "below" the stated viscosity. However, the examiner does not agree with applicant's interpretation of the text. The text actually teaches that one shall not cast the melt below the stated viscosity.

e. Applicant in page 10, 1st para. of the response stated that Liebermann patent is directed to cast sheets that are at least a factor of two thinner than those claimed in the current application. However, it is a common knowledge that the thickness of the cast strip is determined by number of factors, such as the viscosity and the temperature of the melt, the ejection pressure, the rotational speed of the chill wheel, the surface tension between the melt and the chill wheel surface, diameter of the nozzle, etc. (see col. 3, lines 42-60 of Pryor et al.) It would have been obvious to manipulate those process parameters to obtain the cast strip with a designated thickness.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kuang Y. Lin/
Primary Examiner, Art Unit 1793

6-20-08